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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,864	08/23/2001	Goran Lundgren	LAGROTH-023	3544

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12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/830,864	LUNDGREN ET AL.
	Examiner Sam Chuan C. Yao	Art Unit 1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 January 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 7-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 7-14 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____ .

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Election/Restrictions

1. Counsel's argument regarding the restriction requirement is moot, since the restriction requirement has been withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite because it is unclear whether this claim requires subjecting a mat with a steam treatment in a steam injection press or merely require generating a steam from a moisture in a heated mat. For the purpose of examining this limitation, it is assumed to require, subjecting a mat with a steam in a steam injection press. Furthermore, the limitation "*supplying hot air to said steam injection*" is confusing. Does this limitation require exposing a mat with a heated air or not? For the purpose of examining this limitation, it is assumed to require, exposing a mat with a heated air. Moreover, the limitation "...
condensation of said steam, said gaseous emissions, and any leakage of air from the surroundings is prevented" is also confusing. Does this limitation require preventing any air leakage **from** surrounding into a steam injection press **or** require preventing steam, gaseous emissions, and air-leakage from condensing?

For the purpose of examining this limitation, it is assumed to require, preventing steam, gaseous emissions, and any surrounding air-leakage into a press from condensing. Equally important, it is also unclear whether this limitation precludes any condensation of a steam in a mat as the mat is being injected with the steam **and/or** before a step of supplying hot air? For the purpose of examining this limitation, it is assumed that, this limitation does not preclude condensation of an injected steam in/on a mat.

Claim 12 is indefinite for the same reason as claim 7.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eriksson et al (US 5,932,156) using a PCT publication date of 02-13-97 in view of Tisch (US 5,433,905) and Camp, III (US 3,992,135).

Eriksson et al discloses a process of making a lignocellulosic board, the process comprises: a) providing a belt press, the belt press includes a pair of endless pervious steel band of wires, a pair of steam injection compression rollers, and a heating zone for curing a mat; b) compressing a mat using the belt press; c) injecting a steam to the mat using the compression rollers; d) curing the steam injected mat in the heating zone; and, e) passing the cured mat to a conditioning

zone, where gases are collected and the cured mat is cooled (col. 4 line 9 to col. 5 line 24; figure 6). Although not expressly disclosed, a VOC is intrinsically generated/emitted during a heat-compressing operation of a mat in a belt press. **Alternatively**, although not presently required, it would have been obvious in the art to inject gases such as a curing agent in heat-compressing a mat in a belt-press, as such is conventional in the art making lignocellulose board in order to accelerate the curing of a resin in a fiber mat during a heat-compression operation in a belt press as exemplified in the teachings of Tisch (col. 8 lines 26-40). Eriksson et al does not teach capturing injected steam, VOC and/or gases such as a curing agent generated/emitted during a heat-compressing operation. However, it would have been obvious in the art to provide a vacuum means to a belt press in the process taught by Eriksson, because it is conventional in the art making lignocellulose board to provide a vacuum means to a steam injection belt press to remove steam and gases in the press as exemplified in the teachings of Tisch (abstract). It directly follows that, injected steam, VOC and/or gases such as a curing agent generated/emitted in the modified process of Eriksson et al are captured using a vacuum means.

Ericksson et al is silent on a type of device being used in a heating zone. In particular, Erickson et al does not teach using heated air in a heating zone. However, it would have been obvious in the art to provide a pair of perforated heated platens, each platen having a heated air injected to the platen in a heat zone of a belt press, as such is well known in the art in order to uniformly cure a

mat and protect a pair of steel belts as exemplified in the teachings of Camp, III. Furthermore, it would have been obvious in the art to supply a heated compressed air having a temperature of 350 °F, because Camp III discloses a desirability of supplying a compressed heated air having a temperature range of 225-350 °F to a pair of curing platens. One in the art would have applied a workable range taught by Camp III. It directly follows that, in view of the similarity of the productions processes between the modified process of Eriksson et al and a recited process in claim 1, and further in view that, a supplied compressed heated air has a temperature of 350 °F, which is significantly higher than hot-air temperature of greater than 212 °F recited in claim 10, condensation of a steam, VOC and/or gases such as a curing agent, and surrounding air-leakage (if any) must be prevented.

6. Claims 8-9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 5 above as applied to claim 7 or 12 above, and further in view of Admitted Prior Art (APA).

The APA discloses that "*A well known problem ... is that gases are generated in the press during the compression process, which takes place at high temperatures. These gases consist of water vapour (steam), ... (VOC), and gaseous phenol ... It has been found that long time exposure to these substances result in irritation, and that they are harmful to personal health ... Consequently authorities ... have established rules and regulations that state the emission concentrations that are permitted in work place and the concentrations*

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permitted in emissions to the atmosphere" (specification; page 1 to page 2 line 2). Moreover, it is also a notoriously common practice in the art to incinerate polluting gases such as a VOC emitted during a manufacturing process. For these reasons, motivated by a desire to reduce an emission of VOC and/or other gaseous substance, claims 8 and 14 would have been obvious in the art. Furthermore, since: a) it is also conventional to incinerate VOC by exposing the VOC and/or other polluting gases directly to a flame by igniting fuel gas in a furnace at a very high temperature, generally in excess of 1000 °F; and b) it is a common knowledge in the art that, to efficiently ignite a fuel gas, a proper amount of air and hydrocarbon fuel mixture is required, this claim would have been obvious in the art.

7. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 5 above as applied to claim 7 or 12 above, and further in view of Puumalainen (US 5,815,943), Holik (US 5,387,782), Lehtinen (US 4,932,139) and Westelaken (US 4,424,634).

Although not explicitly disclosed by Eriksson et al, one in the art would have readily recognized and understood that a vacuum/suction means is used to collect gases in a conditioning zone. In any event, such would have been obvious in the art as such is conventional method of capturing gases in the art. Moreover, it would have been obvious in the art to use a cooling air to cool a hot board in the conditioning zone, as such is a well known effective method of cooling a resultant hot board.

The references set forth in numbered paragraph 5 do not teach re-using a cooling air in a conditioning zone as a heating medium in a hot-air heating zone in a belt press. However, it would have been obvious in the art, motivated by a desire to conserve energy, to re-use a spent (i.e. heated) cooling air captured in a conditioning zone and re-use it as a heating medium in a hot-air heating zone in a belt press, such is conventional in the art. For instance, Puumalainen teaches using a heated cooling fluid at another point in the process by using it “*to heat the process water in a paper-making or a board machine.*” (abstract; col. 4 line 37 to col. 5 line 26; figure 1); Holik teaches re-using the heat extracted from a spent (i.e. heated) coolant to “*elsewhere in the paper making process*” (col. 5 lines 13-19); Westelaken teaches re-cycling heating/cooling air so that, “*air entering the heater section 40 is effectively pre-heated thereby requiring the addition of considerably less thermal energy to raise air to the desired or requisite drying temperature.*” (emphasis added; col. 7 line 55 to col. 8 line 16); and, Lehtinen teaches “*Cooled air is removed through conduits 22a to 22d and recycled to the heating step in order to recover the remaining heat energy.*” (col. 5 lines 31-41; figure 3). Moreover, it would have been obvious in the art to heat (using a heater) a captured spent (i.e. heated) cooling air prior to re-using it as a heating medium in hot-air heating zone in order to increase the temperature of the captured cooling air to a requisite temperature of 350 °F suggested by Camp III for curing a mat in a belt-press.

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Conclusion

8. Fischer et al (US 5,063,010) is cited to show that it is well known in the art to provide a suction means in a steam injection belt press.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7115 for regular communications and (703) 305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.


Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

scy
March 20, 2003